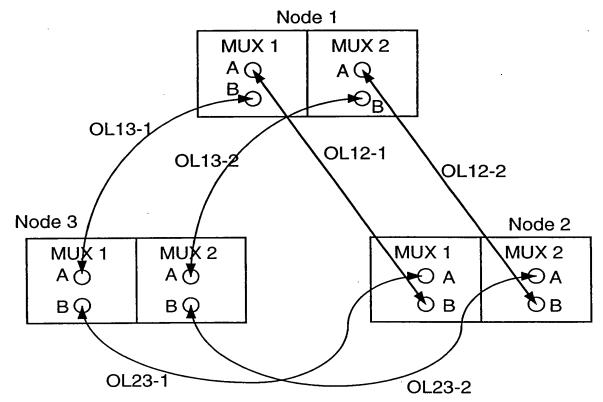


FIG. 1



Physical signal paths from Node 1 to Node 2:

OL12-1; OL12-2; OL13-1, OL23-1; OL13-2, OL23-2;

FIG. 2

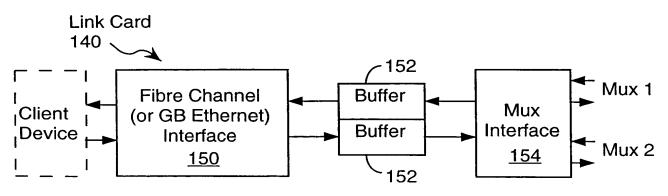


FIG. 4

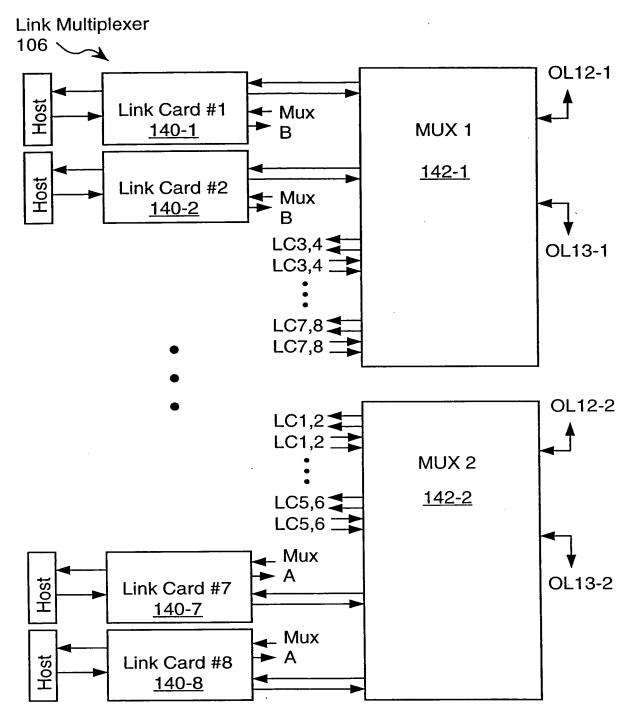


FIG. 3

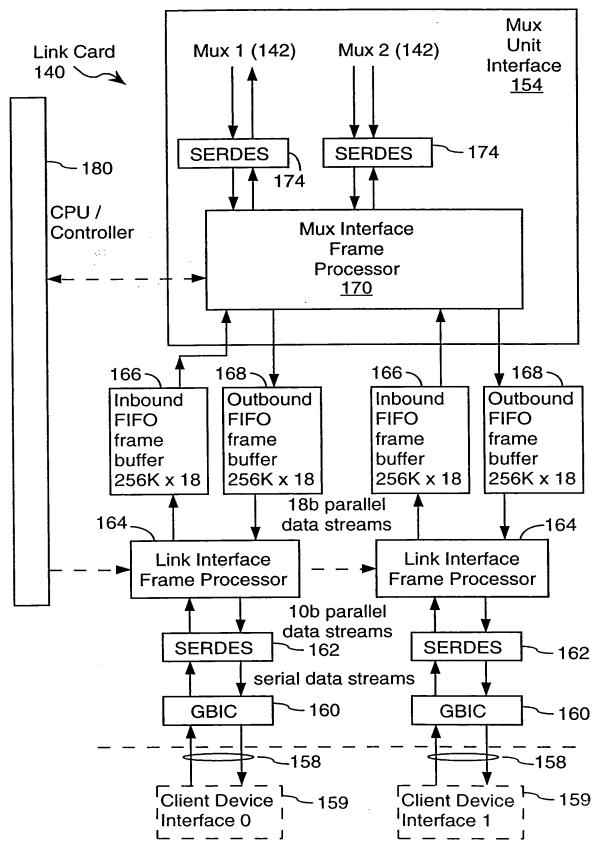


FIG. 5

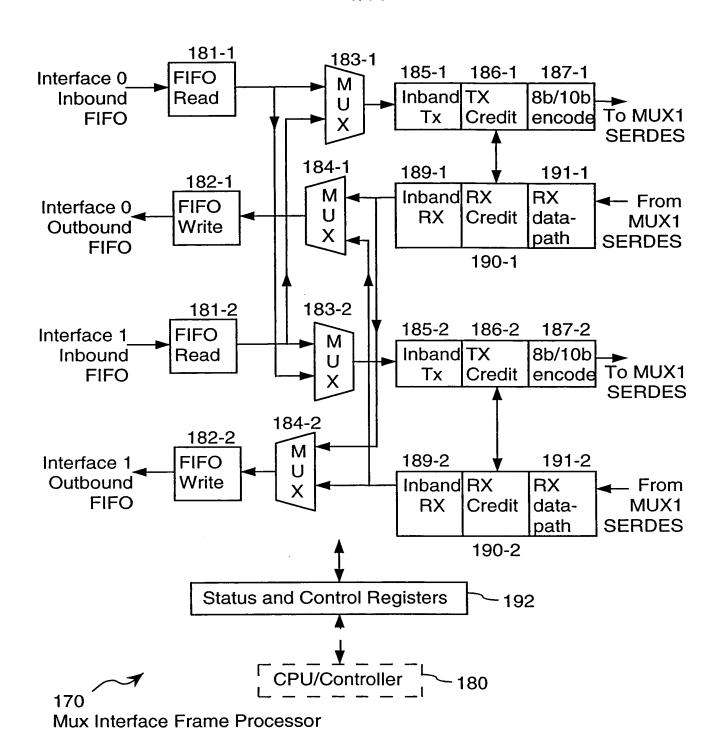
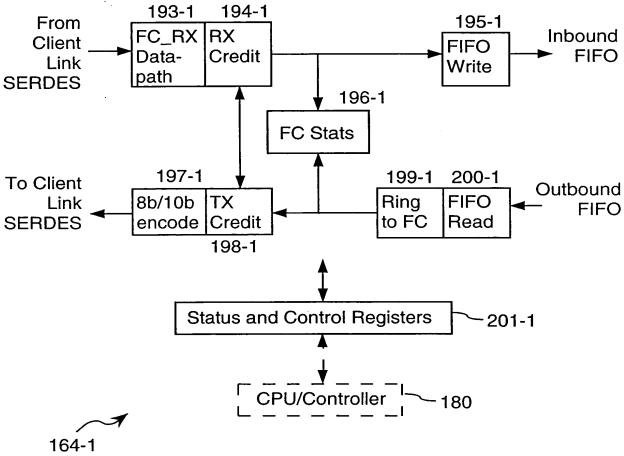
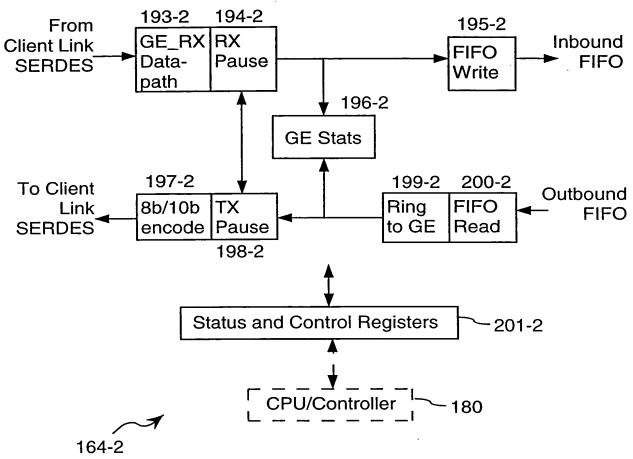


FIG. 6



Link Card FC Link Interface Frame Processor

FIG. 7



Link Card GE Link Interface Frame Processor

FIG. 8

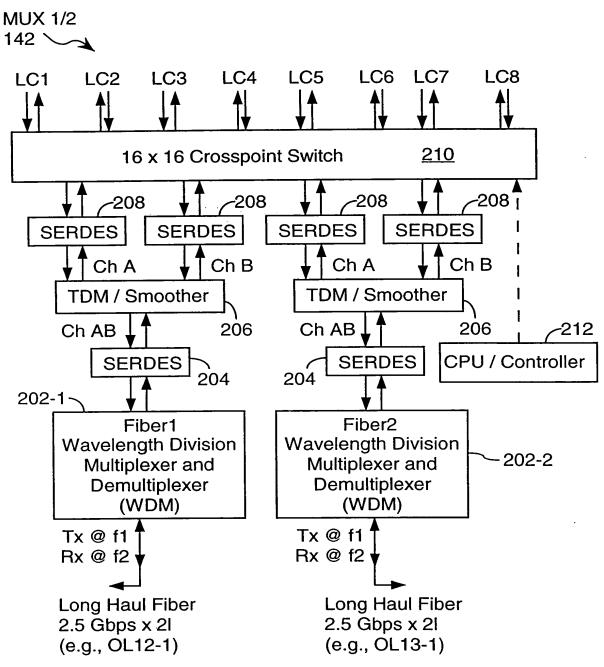


FIG. 9

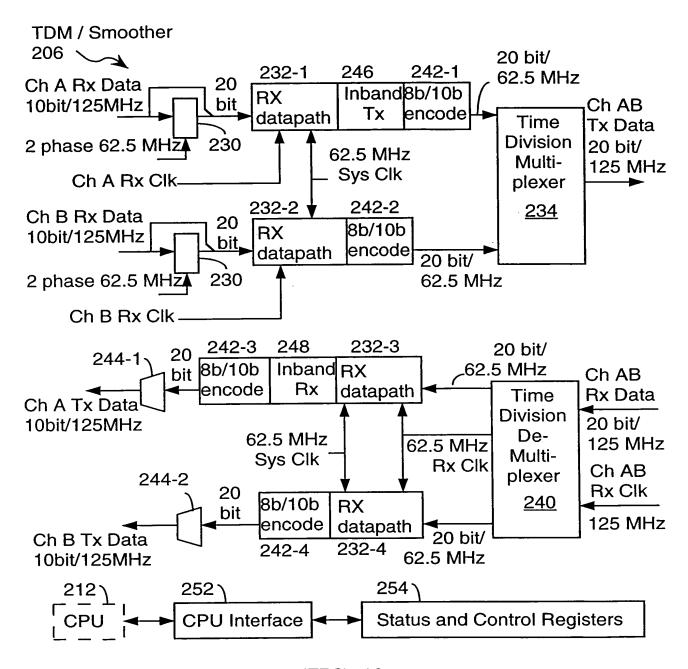


FIG. 10

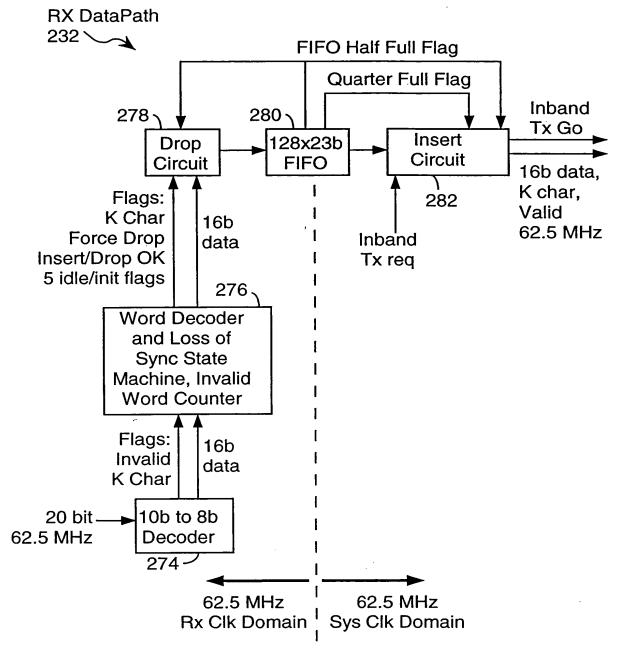
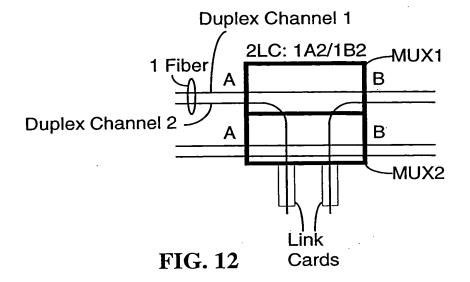
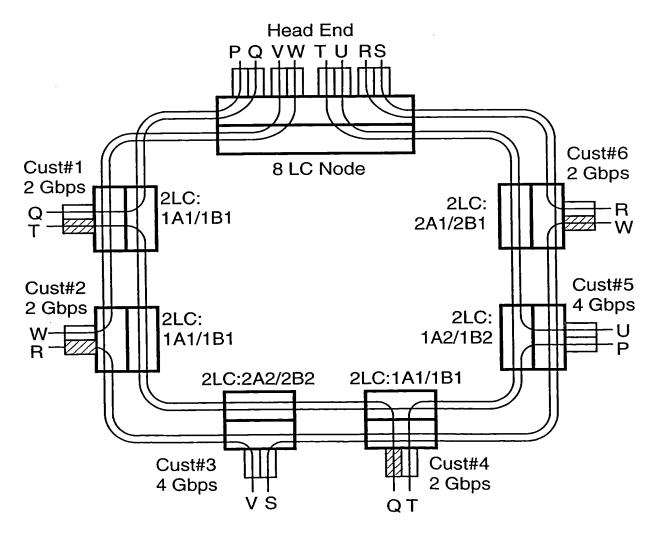
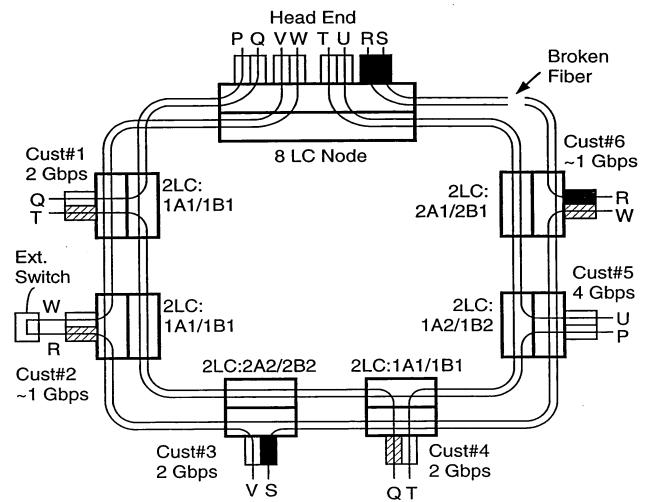


FIG. 11





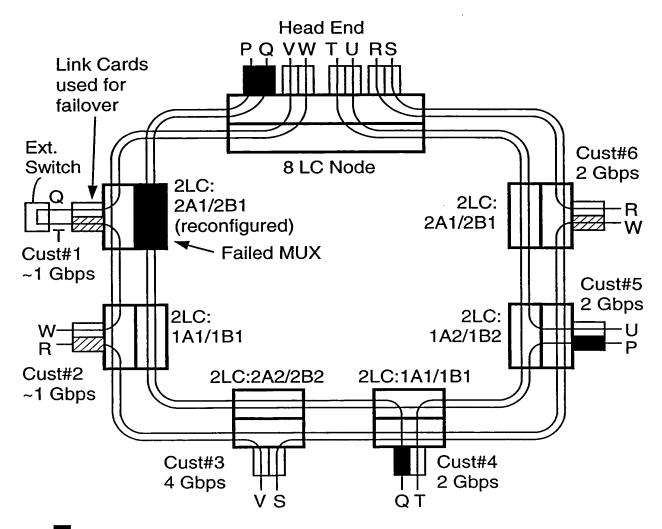
Exemplary Optical Communication System Deployment FIG. 13



- ~ link cards that are non-operational link due to broken fiber
- ~ link cards reserved for failover use

Broken Fiber Failover

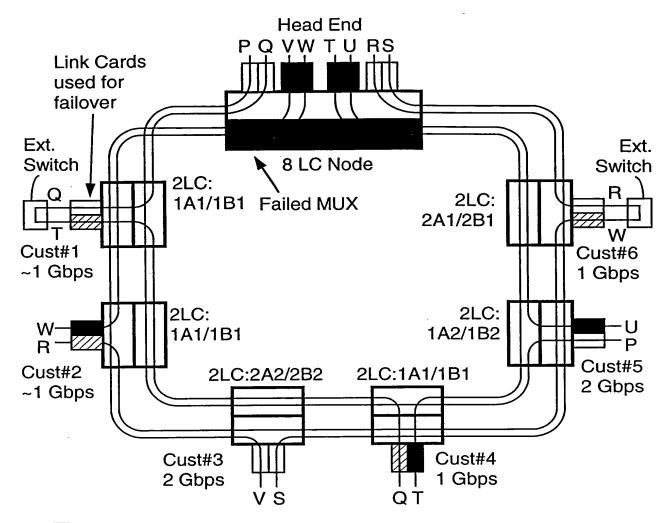
FIG. 14



- ~ link cards that are non-operational link due to Mux failure
- ~ link cards reserved for failover use

Failed Customer MUX Failover

FIG. 15



- ~ link cards that are non-operational link due to Mux failure
- ~ link cards reserved (or being used) for failover use

Failed Head End MUX Failover FIG. 16

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